

PATENT APPLICATION

Page 1 of 2

| | | | | |
|----------------|------------------|--------------------------|------------|------------|
| FORM PTO-1449 | ATTY. DOCKET NO. | PD-10981967-2 | SERIAL NO. | 09/699,080 |
| O I P E | APPLICANT | Philip J. Kuekes, et al. | | |
| NOV 23 2004 | FILING DATE | 3/29/99 | GROUP | |

~~REFERENCE DESIGNATION~~ ~~BY U.S. PATENT DOCUMENTS~~

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS |
|---------------------|--------------------|---------|----------------|---------|--------------|
| WSL | 5665618 | 09/1997 | Meyer, et al | 438/172 | |
| WSL | 5646418 | 07/1997 | Frazier et al. | 257/4 | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

FOREIGN PATENT DOCUMENTS

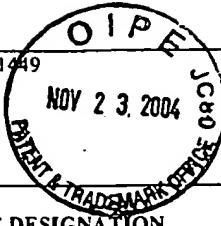
OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | |
|-----|--|
| WSL | L. Guo et al., "Nanoscale silicon field effect transistors fabricated using imprint lithography," <u>Applied Physics Letters</u> , Vol. 71, pp. 1881-1883 (29 September 1997) |
| ↓ | L. Guo et al., "A Single-Electron Transistor Memory Operating at Room Temperature," <u>Science</u> , Vol. 2756, pp. 649-651 (31, January 1997) |
| ↓ | S.J. Tans et al., "Room-temperature transistor based on a single carbon nanotube," <u>Nature</u> , Vol. 393, pp. 49-52 (7 May 1998) |
| ↓ | K.K. Likharev, "Correlated discrete transfer of single electrons in ultrasmall tunnel junctions", <u>IBM Journal of Research and development</u> , Vol. 32, pp. 144-158 (January 1998) |

EXAMINER

DATE CONSIDERED

Rev. 10/94 (Form 3.05)



PATENT APPLICATION

FORM PTO-1449

ATTY. DOCKET NO. PD-10981967-2 SERIAL NO. 09/699.080

SERIAL NO. 09/699.080

NOV 23 2006

Philip J. Kuekes et al.

APPLICANT

Timp 52

21.

REFERENCE DESIGNATION **U.S. PATENT DOCUMENTS**

FOREIGN PATENT DOCUMENTS

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | |
|-----|--|
| WSL | Heath, "A defect-Tolerant Computer Architecture: Opportunities for Nanotechnology", <u>Science</u> , Vol. 280, pp. 1716-1721 (June 12, 1998) |
| | |
| | |
| | |

EXAMINER

DATE CONSIDERED

Rev. 10/94 (Form 3.05)



PATENT APPLICATION
Sheet 1 of 5

| | | |
|---|--------------------------------|------------|
| FORM PTO-1449 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary) | ATTY. DOCKET NO. 10981967-2 | SERIAL NO. |
| | APPLICANT Kuekes et al | |
| | FILING DATE March 29, 1999 | GROUP |

REFERENCE DESIGNATION U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS |
|------------------|----|-----------------|----------|------------------|-------|-----------|
| WSL | 1A | 3,975,623 | 8/17/76 | Weinberger | 235 | 152 |
| | 1B | 4,208,728 | 6/17/80 | Blahut et al | 365 | 154 |
| | 1C | 5,475,341 | 12/12/95 | Reed | 327 | 566 |
| | 1D | 5,729,752 | 3/17/98 | Snider et al | 395 | 800 |
| | 1E | 5,790,771 | 8/4/98 | Culbertson et al | 395 | 182.01 |
| | 1F | 5,640,343 | 6/17/97 | Gallagher et al | 365 | 171 |
| ↓ | 1G | 5,519,629 | 5/21/96 | Snider | 364 | 490 |
| | 1H | | | | | |
| | 1I | | | | | |
| | 1J | | | | | |
| | 1K | | | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS | TRANSLATION |
|--|----|-----------------|------|------|-------|-----------|-------------|
| | | | | | | | YES |
| | 1L | | | | | | |
| | 1M | | | | | | |
| | 1N | | | | | | |
| | 1O | | | | | | |
| | 1P | | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|-----|----|---|
| WSL | 1R | J.R. Heath et al, "A Defect-Tolerant Computer Architecture: Opportunities for Nanotechnology", Science, Vol. 280, pp. 1716-1721 (June 12, 1998) |
| ↓ | 1S | L. Guo et al, "Nanoscale Silicon Field Effect Transistors Fabricated Using Imprint Lithography", Applied Physics Letters, Vol. 71, pp. 1881-1883 (September 29, 1997) |
| ↓ | 1T | A.M. Morales et al, "A Laser Ablation Method For The Synthesis Of Crystalline Semiconductor Nanowires", Science, Vol. 279, pp. 208-208 (January 9, 1998) |

[Handwritten signature] 8/18/05



COPY

PATENT APPLICATION
Sheet 2 of 5

| | | |
|---|---------------------------------|-----------------|
| FORM PTO-1449 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary) | ATTY. DOCKET NO. 10981967- 2 | SERIAL NO. 3 |
| | APPLICANT Kuekes et al | |
| | FILING DATE March 29, 1999 | GROUP |

REFERENCE DESIGNATION U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS |
|------------------|-----------------|------|------|-------|-----------|
| 2A | | | | | |
| 2B | | | | | |
| 2C | | | | | |
| 2D | | | | | |
| 2E | | | | | |
| 2F | | | | | |
| 2G | | | | | |
| 2H | | | | | |
| 2I | | | | | |
| 2J | | | | | |
| 2K | | | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS | TRANSLATION | |
|--|----|-----------------|------|------|-------|-----------|-------------|----|
| | | | | | | | YES | NO |
| | 2L | | | | | | | |
| | 2M | | | | | | | |
| | 2N | | | | | | | |
| | 2O | | | | | | | |
| | 2P | | | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|-----|----|--|
| W82 | 2R | J.R. Heath et al, "A Liquid Solution Synthesis Of Single Crystal Germanium Quantum Wires", Chemical Physics Letters, Vol. 208, No. 3, 4, pp. 263-268 (June 11, 1993) |
| | 2S | V.P. Menon et al, "Fabrication and Evaluation Of Nanoelectrode Ensembles", Analytical Chemistry, Vol. 67, pp. 1920-1928 (July 1, 1995) |
| ↓ | 2T | L. Guo et al, "A Silicon Single-Electron Transistor Memory Operating At Room Temperature", Science, Vol. 275, pp. 649-651 (January 31, 1997) |

8/18/05



PATENT APPLICATION
Sheet 3 of 5

| | | |
|---|------------------|----------------|
| FORM PTO-1449 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary) | ATTY. DOCKET NO. | SERIAL NO. |
| | 10981967-2 | |
| | APPLICANT | Kuekes et al |
| | FILING DATE | March 29, 1999 |
| | GROUP | |

REFERENCE DESIGNATION U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS |
|------------------|-----------------|------|------|-------|-----------|
| 3A | | | | | |
| 3B | | | | | |
| 3C | | | | | |
| 3D | | | | | |
| 3E | | | | | |
| 3F | | | | | |
| 3G | | | | | |
| 3H | | | | | |
| 3I | | | | | |
| 3J | | | | | |
| 3K | | | | | |

FOREIGN PATENT DOCUMENTS

| | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS | TRANSLATION | |
|----|-----------------|------|------|-------|-----------|-------------|----|
| | | | | | | YES | NO |
| 3L | | | | | | | |
| 3M | | | | | | | |
| 3N | | | | | | | |
| 3O | | | | | | | |
| 3P | | | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|-----|----|---|
| WSL | 3R | S.J. Tans et al, "Room-Temperature Transistor Based On A Single Carbon Nanotube", Nature, Vol. 393, pp. 49-52 (May 7, 1998) |
| | 3S | K.K. Likharev, "Correlated Discrete Transfer Of Single Electrons In Ultrasmall Tunnel Junctions", IBM Journal of Research and Development, Vol. 32, No. 1, pp. 144-158 (January 1998) |
| ↓ | 3T | R.E. Jones Jr., et al, "Ferroelectric Non-Volatile Memories For Low-Voltage, Low-Power Applications", Thin Solid Films, Vol. 270, pp. 584-588 (December 1, 1995) |

[Handwritten signature] 8/18/05



PATENT APPLICATION
Sheet 4 of 5

| | | | |
|---|--|--------------------------------|------------|
| FORM PTO-1449 | | ATTY. DOCKET NO. 10981967-2 | SERIAL NO. |
| LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT | | APPLICANT Kuekes et al | |
| (Use several sheets if necessary) | | FILING DATE March 29, 1999 | GROUP |

REFERENCE DESIGNATION U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS |
|------------------|-----------------|------|------|-------|-----------|
| 4A | | | | | |
| 4B | | | | | |
| 4C | | | | | |
| 4D | | | | | |
| 4E | | | | | |
| 4F | | | | | |
| 4G | | | | | |
| 4H | | | | | |
| 4I | | | | | |
| 4J | | | | | |
| 4K | | | | | |

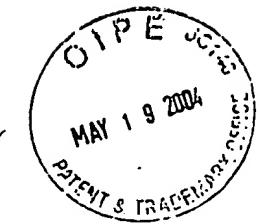
FOREIGN PATENT DOCUMENTS

| | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS | TRANSLATION | |
|----|-----------------|------|------|-------|-----------|-------------|----|
| | | | | | | YES | NO |
| 4L | | | | | | | |
| 4M | | | | | | | |
| 4N | | | | | | | |
| 4O | | | | | | | |
| 4P | | | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|-----|----|---|
| WSL | 4R | D.B. Amabilino et al, "Aggregation Of Self-Assembling Branched [n]-Rotaxanes", New Journal of Chemistry, Vol. 22, No. 9, pp. 959-972 (September 11, 1998) |
| | 4S | T. Vossmeyer et al, "Combinatorial Approaches Toward Patterning Nanocrystals", Journal of Applied Physics, Vol. 84, No. 7, pp. 3664-3670 (October 1, 1998) |
| ↓ | 4T | D.V. Leff et al, "Thermodynamic Control Of Gold Nanocrystal Size: Experiment And Theory", The Journal of Physical Chemistry, Vol. 99, pp. 7036-7041 (May 4, 1995) |

[Signature] 8/18/05



CCOPY

PATENT APPLICATION
Sheet 5 of 5

| | | |
|---|------------------|----------------|
| FORM PTO-1449 LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary) | ATTY. DOCKET NO. | SERIAL NO. |
| | 10981967-2 | |
| | APPLICANT | Kuekes et al |
| | FILING DATE | March 29, 1999 |
| | GROUP | |

REFERENCE DESIGNATION U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS |
|------------------|-----------------|------|------|-------|-----------|
| 5A | | | | | |
| 5B | | | | | |
| 5C | | | | | |
| 5D | | | | | |
| 5E | | | | | |
| 5F | | | | | |
| 5G | | | | | |
| 5H | | | | | |
| 5I | | | | | |
| 5J | | | | | |
| 5K | | | | | |

FOREIGN PATENT DOCUMENTS

| | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS | TRANSLATION |
|----|-----------------|------|------|-------|-----------|-------------|
| | | | | | | YES |
| 5L | | | | | | |
| 5M | | | | | | |
| 5N | | | | | | |
| 5O | | | | | | |
| 5P | | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | | |
|-----|----|--|
| WSL | 5R | J.D.L. Holloway et al, "Electron-Transfer Reactions Of Metallocenes: Influence Of Metal Oxidation State On Structure And Reactivity", Journal of the American Chemical Society, Vol. 101, pp. 2038-2044 (April 11, 1979) |
| | 5S | C. Mead et al, "Introduction to VLSI Systems", Addison-Wesley, Ch. 3, Section 10, pp. 79-82 (1980) |
| ↓ | 5T | C.P. Collier et al, "Electronically Configurable Molecular-Based Logic Gates", Science, Vol. 285, pp. 391-394 (July 16, 1999) |

[Signature] 8/18/05